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FAIR DIVISION: A NEW APPROACH TO THE SPARITLY ISLANDS CONTROVERSY

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Fair Division: A New Approach to the Spratly Islands Controversy

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Abstract

The Spratly Islands are a group of over 230 small islands and reefs in the South China Sea. Both China and Taiwan, as well as four members of the Association of Southeast Asian Nations (ASEAN) - Vietnam, the Philippines, Malaysia, and Brunei - have made claims on part or all of the land areas and surrounding waters. There have been armed clashes in the region over the islands, and the controversy has heated up because of the possibility of substantial oil and gas deposits in the seabed nearby.

The claims of the different countries, the Law of the Sea Convention, and the possible role of the International Court of Justice in resolving the dispute are reviewed. Because there are multiple, overlapping claims and no single country has had continuous possession of the area, it is unlikely that international legal procedures can resolve the dispute quickly.

There are four major issues in the dispute: sovereignty, economic development, freedom of passage, and regional security. We focus on sovereignty and suggest a fair division procedure called Adjusted Winner (AW) as a way to facilitate negotiations. Under AW, two sides each allocate 100 points over the goods to be divided, which yields a division satisfying several properties of fairness.

We see the process as a two-step one, whereby China would first negotiate with ASEAN, and then the ASEAN countries would negotiate among themselves. As an example of how the China-ASEAN bargaining might go, we have divided the region into five zones and present three potential bidding strategies for China, and two for ASEAN, that give six different allocations of the islands. The AW allocations are efficient, equitable, and envy-free, and, in our example, give both sides between 65% and 83% of what they prefer.

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Fair Division: A New Approach to the Spratly Islands Controversy

The security issues in East Asia attracting the most attention today are: (1) the continuing uncertainty on the Korean peninsula, (2) escalating antagonism between Beijing and Taipei, and (3) competing claims of sovereignty and economic jurisdiction in the Spratly Islands in the South China Sea.

Concern that North Korea might acquire nuclear weapons put Pyongyang in the international spotlight during 1994, and negotiations have yet to resolve this problem. Growing hostility in the Taiwan Strait has dominated political commentary in the last year, along with discussion of Hong Kong's upcoming reversion to Chinese control. Yet attention may well shift southward in the next few years as the significance of the Spratly Islands is more widely understood.

Many observers have speculated about potential off-shore oil in the Spratlys region. In light of this potential, there has been an extensive debate about China's military intentions and capabilities in the area. The intent of this article is to broaden that discussion and (i) explain the strategic significance of the issue; (ii) show that neither the current working groups nor rules from the Law of the Sea Convention are likely to resolve the problem expeditiously; and (iii) demonstrate how

1 David Denoon would like to express his appreciation to the U.S. Institute for Peace for grant support on this research.


4 The formal title of the most recent agreement, completed in July 1994, is the United Nations Convention on the Law of the Sea III (UNCLOS III). To simplify matters, we will refer to the convention as simply LoS.
a new fair-division procedure could facilitate negotiations and possibly resolve the dispute among the claimants to the Spratlys.

I. Background

There are over 230 islands and reefs in the Spratly group, clustered in the South China Sea in the shape of a parallelogram, between the Philippine Island of Palawan and the southeast coast of Vietnam. There are six claimants to all or part of the Spratlys. Four of them — Vietnam, the Philippines, Malaysia, and Brunei — are members of the Association of Southeast Asian Nations (ASEAN); the remaining two claimants are China and Taiwan.

Since the Taiwan Government (Republic of China) and the Government of the People’s Republic of China (PRC) both still assert there is only one China, the PRC and Taiwan claims currently overlap. We will not speculate on how their differences may be resolved in the future. Instead, we will treat them as a single Chinese claim. This is a reasonable simplification because, at the workshops sponsored by Indonesia and at the Senior Officers’ Meetings (more on these later), China and Taiwan have had separate representatives but have coordinated their positions in advance.

Most of the Spratly islands and reefs are tiny; none is over a mile in length. It is also important to note that many of the reefs are not above

5 The word "claimant" is used here rather than "countries," because Taiwan has a long-standing claim but is not an independent country. Also, since all the claims include territorial waters, when we use the term "Spratly Islands" we mean "Spratly Islands and surrounding waters."

high tide and therefore do not qualify under LoS for a 12-mile zone of territorial sea.\(^7\)

China did not occupy a single Spratly Island until March 1988, when it clashed with Vietnam and took over Fiery Reef.\(^8\) Yet the PRC claims the entire chain on the basis of early exploration and historical visits by Chinese naval and fishing vessels.\(^9\)

Vietnam bases its claims on French administration of the Spratlys and its subsequent occupation of selected islands (mostly by the South Vietnamese). The Philippine claims result from the actions of Tomas Cloma, a Filipino, who asserted rights to the entire region in 1956 on the grounds that the islands were unoccupied. Malaysia has made much more limited claims, based on occupancy and LoS rules for extension of its continental shelf. Brunei claims no islands but a defined territorial sea, based on LoS. We present in Table 1 a detailed summary of these competing claims and their historical origins.\(^10\)

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8 Taiwan occupied one Spratly Island, Itu Aba, between 1947 and 1950 and then, continuously, after 1956.

9 The Chinese claim has not been precisely defined (or "delimited," using LoS terminology). However, a Chinese maritime specialist drew a "dashed line" in 1947 that included Taiwan, Hainan, the Paracels, Macclesfield Bank, all of the Spratlys, and open waters close to Indonesia, Malaysia, and Vietnam.

10 For a map of the territorial seas claimed by the disputants, see B. Thomas, "The Spratly Islands Dispute," *mimeo.*, paper presented at the School of Oriental and African Studies, University of London, May 10, 1993, Fig. 5.
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| --- |
| **Occupied Today** |
| Number of Islands/Reefs |
| **Name of Claim** |
| **1st Occupation** |
| **1st Claim** |
| **Territorial Seas and Fishing Zone, Adjacent to EEZ** |
| **Continental Shelf + Islands adjacent to EEZ** |
| **Historical Use/Occupancy** |
| **Territorial Sea** |
| **Historical Claims** |
| **Presenting Claimant** |
| **United Vietnam** |
| **South Vietnam** |
| **North Vietnam** |
| **Vietnam/Pakistan** |
| **People's Republic of China** |
| **Philippines** |
| **Malaysia** |
| **Brunei** |

**Table**: Spratly Islands Controversy

1. In 1956, France claimed the island never ceded control of the Spratly Islands.
2. The Vietnamese first claimed sovereignty over the Paracels in 1980, but later claimed the Spratlys to defend their occupation.
3. In 1988, China published the new law of the sea proclamation, extending its claims to the专属 South China Sea. In 1992, the United Nations Tribunal issued a decision. The area is now under joint control of China and Vietnam.
4. In 1996, the Philippines claimed the islands as its own.
5. In 1997, the Chinese claims were recognized by the Philippines as their own. The Spratlys are now under Chinese control.
6. In 1999, the Philippines claimed the islands as its own, but the Chinese continue to occupy them.

**Legend**:
- **EEZ**: Exclusive Economic Zone
- **TFF**: Territorial Fishing Zone
- **TSL**: Territorial Sea Limit
- **TSS**: Territorial Sea Sector
- **TP**: Territorial Province
- **TQ**: Territorial Quarter
- **TPH**: Territorial Province House
- **TPC**: Territorial Province Council
World attention was drawn to the Spratlys in March 1988 when China sank three Vietnamese vessels and killed at least 75 Vietnamese soldiers and sailors in the process of seizing Fiery Reef.\textsuperscript{11} This clash followed an earlier incident in 1974, when China fought with South Vietnam and expelled Saigon’s troops from the Paracel Islands. Following China's occupation, Deng Xiaoping, leader of the Chinese Communist Party, told Philippine President Corazon Aquino, during her state visit to Beijing in 1988, that the entire South China Sea was Chinese territory. Deng said China's position on the Spratlys had three components: Beijing (1) had sovereignty, which was non-negotiable; (2) would assure free passage for aircraft and ships; and (3) was willing to participate in joint ventures with other nations to develop the oil and gas deposits.

This rigid stance by China sparked major concerns in Southeast Asia. Each of the ASEAN claimants felt their interests was being dismissed, and, worse, that China was clearly willing to use force to get its way.

By 1990 Indonesia, with assistance from Canada, was trying to defuse tension over the Spratlys.\textsuperscript{12} Indonesians set up a workshop series which included researchers and officials from all the claimants as well as outside specialists. These workshops gradually evolved into two tracks of discussions: (i) an extensive series of technical working groups, focusing on such issues as mapping, scientific research, and ecological


\textsuperscript{12} Indonesia chose to play this role because it was not a claimant in the Spratlys area. Although the Natuna Islands, where Exxon plans a $35 billion natural gas investment, are inside the Chinese "dashed-line" of claims, it has been widely reported that Indonesia has been given assurance by China that Beijing will not contest Jakarta's rights to develop the Natuna fields.
issues; and (ii) the Senior Officer's Meetings (SOMs), at which government representatives discuss more sensitive subjects, including sovereignty.

In 1992 China took two unilateral actions which, again, upset the ASEAN countries. In February, the Chinese National People's Congress passed a revised Territorial Sea Law, which made sweeping claims of Chinese sovereignty over many areas clearly in dispute. Some observers saw this mostly as an attempt to bring Chinese law into conformity with the revised LoS Convention, whereas others saw it as a brazen attempt to legitimize Chinese unilateral moves. In addition, in June 1992 authorities in Beijing announced that they had let an oil concession to Crestone Energy Corporation, a small Denver-based firm, for exploration and development in the Wan-an Bei 21 (Vanguard Bank) sector off the Vietnamese coast. The WAB-21 site was in the center of several conflicting claims by other countries. The manner of the announcement was interpreted as a sign of Beijing's willingness to rebuff ASEAN claims.

These Chinese moves caused such a furor within the region that, in July 1992 at the ASEAN Summit Meeting's Post Ministerial Conference (which

13 In addition to the South China Sea, which the 1992 Law claimed as unquestionably Chinese, the Law also said the Senkakau (or Diao yu-tai) Islands - occupied by the Japanese - were indeed Chinese.


included observers from Beijing), China was pressed into agreeing that (i) no more violence would be used in settling Spratly Island issues; and (ii) questions of sovereignty would be postponed until there was an appropriate climate for settlement.

Still another flap developed in January 1995 when it was discovered that Chinese People's Liberation Army troops had removed Philippine markers and set up an encampment on a tiny coral outcropping, known as Mischief Reef. Although Mischief Reef had not been occupied by Filipinos, and no force was used, the location was hitherto Philippine and clearly within Manila's 200 nm Exclusive Economic Zone (EEZ). This produced a very heated reaction within ASEAN, leading in April 1995 to ASEAN representatives at the Hangzhou SOM taking a unified stand against China's actions.

In May 1995, the U.S. Department of State issued a formal statement on the Spratlys, saying that "freedom of passage was a fundamental interest of the U.S." and urging all the parties to avoid further use of force. Responding to the resentment engendered by its actions, the Chinese government decided on a conciliatory move. In July 1995 at the ASEAN Summit in Brunei, Foreign Minister Qian Qichen announced that China would attempt to resolve the Spratlys dispute using "recognized international law," including the 1982 LoS Convention.

While, currently, there appears to be a period of calm, there has been, essentially, a stalemate in the Indonesia workshops and no progress in the

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SOMs since the Hangzhou stand-off. Many analysts see China caught in something of a bind. On the one hand, Beijing places a high premium on preserving its autonomy and avoiding concessions that will limit its future actions. On the other hand, China's need for foreign capital and technology require adhering to international norms. Attempts at maintaining this balance may explain the oscillation between a confrontational style and a more diplomatic one.

II. The Need for a Resolution

A peaceful and stable resolution of the Spratlys claims is important for a number of reasons. First, the pattern of violence makes many observers speculate: Are the 1974 and 1988 incidents a prologue to a larger conflict?

Second, freedom of passage is critical not only to countries in the region but also to all major trading nations. Approximately 25% of world shipping moves through the South China Sea, so it is vital that no hostile nation control the shipping routes. Similarly, the area is critical for military sea lanes, because fleets moving from the Pacific to the Indian Ocean need to transit the South China Sea. Moreover, if one nation

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19 For an elaboration of this argument, see Xiaoxiong Yi, "China's U.S. Policy Conundrum in the 1990s," Asian Survey, August 1994, Vol. 34, No. 8, pp. 675-691.


21 For an analysis of the vulnerability of civilian shipping, see R. Grunawalt, Targeting Enemy Merchant Shipping (Newport, R.I.: Naval War College International Law Studies, 1993).
dominated the area, it would have a chilling effect on the ASEAN region.\textsuperscript{22}

Thus, specialists have been working on how best to ensure that freedom of passage is guaranteed. Should it be through bilateral or multilateral treaties? Or through the creation of a broader regional security organization?

Third, the complexity of this issue is such that no single institution in the region has been able to deal satisfactorily with all aspects of it. The workshops and the SOMs have been a useful venue for low-keyed discussion, and the ASEAN summits have provided visibility for the topic. But there is little doubt that one of the principal motivations for proceeding with the ASEAN Regional Forum (ARF) was to create a setting wherein China could not only participate but also hear the concerns of its neighbors.\textsuperscript{23} Hence, one of the central questions is: Will ASEAN, China, and outside major powers be able to handle this dispute in a way that strengthens regional cooperation, or will it exacerbate rivalries?

III. The Basic Issues

There are four principal issues that underlie the stalemate over the Spratly Islands, which can be summarized by the following questions:

1. Who has sovereignty over the islands and surrounding waters?

2. How will the economic potential of the Spratlys region be developed?


\textsuperscript{23} Only the ASEAN countries are members of the ARF, but China, Japan, Australia, and the United States are observers. An unstated objective of ARF has been to discuss ASEAN security issues with the major powers present. See, R. Tasker and A. Schwarz, "ASEAN Preventive Measures," \textit{Far Eastern Economic Review}, August 4, 1994, pp. 14-15.
3. How will freedom of passage be guaranteed?

4. What form will regional security take?

Sovereignty

Sovereignty is the central problem, with maneuvering on it delaying progress on the other three issues. Although it might be possible to reach some kind of agreement on regional security arrangements and freedom of passage without resolving sovereignty, a precise delineation of national ownership would make dealing with all the interrelated issues far simpler.

It was not until the economic potential of the Spratlys and surrounding areas was recognized that the scramble for claims broke out. This process was accelerated by the negotiations over UNCLOS III, which heightened the salience of continental shelves and EEZs. Because the seabed between the Spratlys does not hold promising formations for hydrocarbons, it is the islands themselves that have become key pieces in a game of strategic positioning to gain access to the surrounding areas and continental shelves.

24 It is important here to make a sharp distinction between "jurisdiction" (which is the right or power to administer an area) and "sovereignty" (which includes both the power to administer and being recognized as the lawful government of an area). Most of the claimants in the Spratlys area have jurisdiction over assorted islands, reefs, and surrounding waters; few have internationally recognized sovereignty.

25 If the United Kingdom, France, the Netherlands, and the United States had been concerned about the Spratlys before World War II, there probably would have been a precise division of ownership. Similarly, if it had been a pressing issue at the time of the 1951 San Francisco Peace Treaty with Japan, there might also have been some sort of settlement of the sovereignty issue.
Now that the tempest created by Chinese occupation of Mischief Reef has subsided somewhat, it is worthwhile to review briefly the strength of the various claims to these islands. To begin with, the legal basis for Chinese claims rests on three grounds: (i) discovery, (ii) occupation, and (iii) repeated assertion of ownership.\(^{26}\) It has been established that Chinese sailors surveyed parts of the Spratlys during the Eastern Han Dynasty (AD 25-220), and that Chinese fishermen and traders frequented the area up until the 1600s.\(^{27}\) Discovery, however, does not confer ownership unless there is relatively continuous occupation, coupled with strong protest if one's nationals are expelled.

Most of the Spratly islands and reefs are not large enough to sustain human habitation, so it is not surprising that China failed to occupy them continuously. This might not have been critical except for the fact that several colonial powers did hold sway in the South China Sea. Moreover, their successor governments (Vietnam, Malaysia, and Brunei) see no good reason to cede ownership to China.\(^{28}\)

Although there are overlapping claims among the ASEAN countries, the Southeast Asian nations are not a military threat to each other. This is


\(^{28}\) Many Chinese still resent the role of "outside" powers in the dispute, including Japan and the United States, which they assert the ASEAN countries are trying to bring into the negotiations. See Chen Jie, "China's Spratlys Policy - With Special Reference to the Philippines and Malaysia," Asian Survey, October 1994, Vol. 34, No. 10, p. 897.
why the dispute has generally been posed as one of China vs. ASEAN.\textsuperscript{29} Although China repeatedly asserted its claims, beginning in the 1930s, they were broad and often undefined,\textsuperscript{30} thus limiting their significance under international law. In fact, many observers believe that China's claims to the Spratlys (and thus 200 nm EEZs spreading outward from the islands) would not be sustained in the International Court of Justice.

This does not mean, however, that the ASEAN claims are necessarily stronger.\textsuperscript{31} As noted in Table 1, Vietnam holds the most islands of all the claimants. It is the successor state to France, which surveyed, periodically occupied, and established an administrative region covering both the Paracel and the Spratlys.\textsuperscript{32}

Nonetheless, there is an enormous hole in Hanoi's claim. During the period 1956-75, North Vietnam "recognized China's claims to the Spratlys," and the consolidated Vietnam is the legal successor state to North Vietnam. Although diplomats from Vietnam now assert that this concession to Beijing

\textsuperscript{29} For example, Vietnam and the Philippines are conducting a series of talks on how to resolve their respective claims and how to deal with China. See Agence France Presse, "Hanoi Sees Spratly Talks With Manila," \textit{International Herald Tribune}, November 9, 1995, p. 4.

\textsuperscript{30} As an example, China claims that its 1887 Treaty with France dividing the Gulf of Tonkin at the meridian 108\textdegree03'13" gives it the right to the Paracel and Spratly Islands and surrounding waters. However, there is nothing in the 1887 Treaty that mentions those islands. See Clive Parry, ed., \textit{The Consolidated Treaty Series}, Vol. 169 (Dobbs Ferry, N.Y.: Oceana Publications).

\textsuperscript{31} Much of the following discussion of ASEAN claims draws upon R. Haller-Trost's detailed and authoritative paper, "International Law and the History of the Claims to the Spratly Islands," \textit{mimeo.}, prepared for the American Enterprise Institute Conference on the South China Sea (Melbourne, Australia: Monash University, September 7, 1994).

\textsuperscript{32} The Paracel Islands are approximately 300 mi. North of the Spratly Islands.
was made under duress - to get assistance during the war between North Vietnam and South Vietnam - this weakens Hanoi's current claim.

The Philippine government claim, made public 15 years after a Filipino citizen asserted sovereignty over virtually all the Spratlys\(^{33}\) - on the grounds that they were unoccupied - is even more dubious.\(^{34}\) No international legal experts have taken the Philippine claim to all the Spratlys seriously. Nevertheless, the Philippines now occupies the same number of islands as China, and its occupancy has been for a longer period than Beijing's. It is important to note that, despite the Manila Treaty (which obligates the United States to defend the Philippines from attack), the United States has never supported or taken a formal position on the Philippine claims in the Spratlys.

The Malaysian claim stems not from historic ties or long-term occupancy but rather from its interpretation of the LoS Convention. During the 1970s, the Malaysians were active participants in LoS negotiations. Recognizing that their continental shelf extended far into the South China Sea, Malaysian forces occupied three reefs (Swallow, Ardasier, and Mariveles), and then made the unprecedented argument that the 200 nm EEZ gave them sovereignty over these additional sites within their EEZ.\(^{35}\) (See Map 1 for their locations.)

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33 The Philippine claim does not cover Spratly Island, but it does covers a trapezoidal area including most of the remaining Spratly Islands and much of the surrounding waters.

34 It is unclear, but this may have been the reason why, in 1956, Taiwan resumed its occupation of Itu Aba - and has kept a small garrison there ever since.

35 The additional Malaysian claims are for Amboyna Cay, Banque Canada Reef, and Commodore Reef. Vietnam controls Amboyna Cay and Banque Canada Reef, whereas the Philippines controls Commodore Reef.
Source: U.S. Department of State Map # B01010, March 1995
The Malaysian claim has not been tested in any court yet, but its logic is the converse of what the UNCLOS III drafters expected. The drafters envisaged that countries would have a right to control the resources in the sea and on the seabed out to 200 nm from their "baselines" of undisputed territory. What the Malaysians have done is to claim that the EEZ actually gives them the right to claim additional territory within the EEZ. If the Malaysian tactic is legally accepted, then it would complicate the Spratlys problem (and other marine development issues as well).

Brunei has taken a lower-keyed approach and does not claim sovereignty over any of the Spratlys. However, it does claim an EEZ of 200 nm, extending northwest from its land territory. Brunei's EEZ covers the waters and seabed surrounding Louisa Reef and Rifleman Bank, which are occupied by Malaysia, but it does not include a claim on the land areas. Brunei expects to manage the fisheries and seabed resources without contesting Kuala Lumpur's control of the land.

In sum, the tangle of sovereignty claims makes clear that no country has both an unassailable legal basis and continuous occupancy to support its Spratly claims. Furthermore, none of the countries occupying an island/reef seems likely voluntarily to relinquish it, at least without some form of compensation or broader political settlement. Also, if China were actively to pursue Foreign Minister Qian Qichen's suggestion that these competing claims be resolved on the basis of international law, there would certainly be years, possibly decades, of litigation.

36 Louisa Reef and Rifleman Bank are southeast of the main Spratly island group.
Development of Economic Potential

While imbroglios over the fisheries suggest the long-term marine potential of the Spratlys is significant, there is little doubt that the main economic potential of the region is in hydrocarbons. By 1976 there had been enough seismological work done on the South China Sea to indicate the possibility of oil and gas finds. Nevertheless, before accurate estimates of hydrocarbon reserves can be made, there need to be two additional steps: exploratory drilling and construction of "appraisal wells." Except for the Wan'An Basin, these additional steps have not been completed, so present estimates remain highly speculative.

In this environment, there has been an unfortunate tendency for some observers to assume the finds will be massive. In July 1995, Beijing's People's Daily referred to the South China Sea "as the second Persian Gulf." Moreover, some Chinese specialists have asserted that the potential for the entire South China Sea is as great as 130 billion barrels of oil (or the equivalent in natural gas).


These estimates seem grossly overstated. In the Wan’An Bei area, Crestone’s geophysical data indicate the prospect of two fields with reserves of roughly 1 to 1.5 billion barrels of oil.\textsuperscript{41} In other areas that are within 200 nm of the Spratlys, there are estimates of three sites with up to 24 billion cubic feet of gas.\textsuperscript{42} Although these levels of potential deposits are impressive, we will not know when and to what extent these resources will be economically viable for development until the appraisal wells are completed.

Many of the geologists who have looked at the current data assume that the principal reserves are in natural gas. Since the location (south and west of the Spratlys) is too far for a pipeline to Hong Kong, the gas sites would need to be developed for liquified natural gas (LNG). Because Japan already has adequate supplies of LNG contracted for the next ten years, and China has no active LNG ports (it would take at least five years to develop one of these sites), real income from the development of gas reserves is not likely to occur for at least 15 years, and possibly much longer.

Many economists assume China will become a major energy importer in the next century.\textsuperscript{43} However, because building deep-sea platforms can cost as much as \$1 billion per site,\textsuperscript{44} it would be optimistic to assume that the

\begin{footnotesize}
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\item[\textsuperscript{42}] These estimates for gas reserves exclude the 1.3 trillion cubic feet supposedly already discovered by Exxon in the Natuna area (which the Indonesians assert will not be part of China’s Spratly claims).
\item[\textsuperscript{43}] See Kang Wu and P. Fesharaki, "China Energy: Short Memos, Number VI," \textit{mimeo.} (Honolulu: East-West Center, December 23, 1994).
\item[\textsuperscript{44}] G. McWilliams, "Pulling Oil from Davy Jones' Locker," \textit{Business Week}, October 30, 1995, p. 74.
\end{itemize}
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disputed South China Sea locations will be developed before sovereignty is resolved.

Freedom of Passage

In one sense, this is the most straightforward of the issues in the Spratly’s conundrum. At present, no country is proposing to restrict air or sea passage through the Spratlys. Three different Chinese leaders have affirmed that the PRC will not impede passage.\textsuperscript{45} In addition, the world’s preeminent naval power, the United States, has explicitly stated that freedom of passage must not be interrupted. These commitments would seem to settle the subject. So why does the issue keep resurfacing?

Even if the Chinese and American avowals are firm, the stakes are enormous. For commercial traffic, if movement through the South China Sea were restricted or unsafe, it would mean taking a much longer alternative route from the Indian Ocean to the Pacific Ocean, probably through the Lombok Strait. This would be slower, longer, and more costly. It would be more expensive for two reasons: the distance traveled would be greater and, if there was the perception of higher risk in the Spratlys region, insurance rates would rise.

Freedom of passage is vital for military purposes as well. UNCLOS III has very clear language covering the conditions under which vessels can transit territorial waters in "innocent passage."\textsuperscript{46} For example,

\textsuperscript{45} Deng Xiaoping in 1988 in Beijing, Li Peng in 1990 in Singapore, and Qian Qichen in Brunei in 1995.

submarines must travel on the surface and show their flag. Surface 
combatants must maintain an unthreatening stance and are, to some extent 
vulnerable, because they cannot maintain full combat readiness. (In 
addition, aircraft must request permission to transit airspace).

The bathymetric features off the Spratlys are such that submarines 
could easily hide in some of the waters around the islands and reefs. 
Hence, countries like Japan and Singapore, which depend on seaborne trade 
for their existence, are very concerned that passage not be impeded. 
Japan's concern is with Chinese naval ambitions, whereas Singapore has 
reservations about even its ASEAN neighbors' intentions. Senior Minister 
Lee Kuan Yew articulates this position:

If ownership of these atolls means territorial waters... 
with 200 nm economic zones, there will be no more open seas. 
The South China Sea will be divided into a mosaic of little 
lakes for six or five different owners.48

There are two related issues which currently complicate the freedom of 
passage question:

First, UNCLOS III permits a nation to designate specific sea lanes 
within its territorial waters for foreign commercial and military use. For 
an island nation, these are called "archipelagic sea-lanes." Recently, the 
Government of Indonesia proposed that foreign vessels be limited to three 
principal routes (the Sunda, Lombok, and Ombai Straits)49 while transiting

47 For a discussion of how China's military plans are perceived, see D. 
Shambaugh, "China's Security Policy in the Post-Cold War Era," Survival, 
Summer 1992, Vol. 34, No. 2, pp. 96-100.


49 Ships using the Ombai Strait would be given permission to proceed through 
two more routes farther East if they were South of Buru Island.
Indonesian archipelagic waters. These rules might be acceptable for some commercial traffic but would sharply limit operational maneuverability for foreign military vessels and the United States strongly opposes being limited to these principal lanes and the lack of an East-West lane inside Indonesian waters.

Second, at the December 1995 ASEAN Summit, the ASEAN heads of government agreed to establish a Southeast Asia Nuclear Weapons Free Zone (NWFZ). The intent was to create a zone in which neither ASEAN nations nor foreign powers would use or threaten to use nuclear weapons. In the definition of the NWFZ, the communiqué included not only the sovereign territory and waters of the ASEAN states but also their EEZs and continental shelves. Since most of the Spratlys region would be within the EEZs or on a continental shelf of an ASEAN nation, the NWFZ concept would, in addition limit outside powers and their ability to extend deterrence in the region. This is currently unacceptable to both China and the United States. Hence, although freedom of passage questions are not the central ones in the Spratlys dilemma, they are important and could become critical over time.

**Regional Security**

Leaders in most of the ASEAN countries see the dispute over the Spratlys as a test case of regional solidarity in the face of Chinese

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51 The ASEAN NWFZ Treaty would limit nuclear deterrence in the region because the wording forbids a nuclear nation to threaten another from within the NWFZ or to threaten a target inside the NWFZ from outside the zone.
pressure on the region. Their immediate objective is to avoid any legal judgment or political settlement that would legitimize a substantially increased Chinese presence in Southeast Asia. The goal of these leaders is to develop some kind of security structure, perhaps by treaty, that makes ASEAN more self-sufficient militarily, especially since Russian power has faded and the United States presence has ebbed somewhat in the region.

This means dealing with two related questions: Externally, what policies will the Chinese pursue? Internally, what kind of security structure will work best, given the heterogeneity of interests and different historical experiences of the ASEAN countries? While neither of these issues can be fully addressed here, it is worth noting how broad the range of opinion is on the subjects.

Some analysts argue that Chinese leaders were shocked by the results of the Persian Gulf War and, though they have no intention of pursuing expansionist policies, are committed to developing a modern, high-tech military. Others see China as fundamentally redefining its interests, with plans to use its new "Active Defense Strategy" as the first step toward projecting its political-military power throughout Southeast Asia and into the mid-Pacific. Still others see China as taking a more global approach, based on Realpolitik that combines increased international influence with military power rooted in a "limited deterrence"


There is no question about the fears that China has created by its threats to fight for the Spratlys. Strategic studies institutes in Southeast Asia are already planning how to respond if there are further military skirmishes in the Spratlys, and uncertainties about the post-Cold War security picture have led to a sharp increase in ASEAN defense expenditures.

Given uncertainty over Chinese directions, the search for a viable "security architecture" has become an ever-present but quietly discussed topic in Southeast Asia. A variety of approaches has been suggested, but all, to date, have foundered over who is to guarantee what? Since there is no immediate military crisis, and no nation wants to appear to be "containing China," these discussions have been rather theoretical. However, were there to be a major military clash in the region, the latent


interest in developing a more tangible alliance would quickly become manifest.

IV. Previous Approaches to the Spratlys Dispute

Study Groups and Dialogues

As discussed in the Introduction, the Indonesian "South China Sea Workshops" have played an important role in regularizing discussion between China and the ASEAN countries. In addition, the workshops have facilitated the creation of the Technical Working Groups and often laid the basis for communiques at ASEAN ministerial meetings. The workshops have met annually since 1990 and have agreed on both principles and topics to be explored.

The principal advantage of the process so far has been the informal and unpolemical nature of the discussion. But this has been offset by the fact that the central problem, sovereignty, has been put aside. This means that the technical groups can proceed only so far without knowing who will control which part of the Spratlys.

59 The countries represented at the 1994 Bukittingi session were Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand, Canada, Cambodia, China, Laos, Taiwan, and Vietnam.

60 The main principles are that there will be peaceful negotiation over sovereignty, but that sovereignty negotiations will be postponed until the timing appears propitious. The topics are: joint development projects, navigation and communication systems, search-and-rescue operations, marine science research, control of drugs, pollution protection, and international legal questions.

President Fidel Ramos of the Philippines has urged United Nations intervention in the dispute, whereas other observers have suggested focused bilateral discussions. However, there is a growing sense among ASEAN foreign policy makers that the study group and dialogue process will make little progress without more political direction.

Proposals to Defer Settling Sovereignty and Proceed With Development

This is the option the Chinese Government prefers, and it has certain advantages. If resolving sovereignty will take years or even decades, then it might be worthwhile to develop the most promising sites as soon as possible. Indeed, there are a number of instances where joint development is already proceeding, even between countries in potentially explosive relationships. For example, Chevron has negotiated an arrangement between Beijing's China National Offshore Oil Corporation (CNOOC) and Taipei's China Petroleum Corporation (CPC) to explore and develop sites north and east of Taiwan. Similarly, there has been cooperation between Vietnam and Cambodia, and even China and Vietnam, on limited sites.

Although this appears to be a pragmatic way to finesse sovereignty, the most promising undeveloped sites in the South China Sea are in such deep water and so far from markets that they will require enormous investments to be made profitable. Few investors will take those risks unless competing claims on the terrain have been settled.


Proposals to Allocate Sovereignty

There has been a plethora of proposals for how to allocate sovereignty in the Spratlys. Oversimplifying, they have been based on two different principles: (i) allowing states to extend their EEZs and squeezing down the size of the disputed area to a small "doughnut hole", or (ii) constraining EEZs to certain shapes and creating a relatively large central area that could be managed by an international development authority representing the six claimants.

The first idea was proposed informally by the Indonesians as a way to clarify questions of sovereignty and to minimize debate about procedures. Although the "doughnut" solution has the merit of simplicity, it would give the bulk of the seabed to the countries nearest the Spratlys, greatly limiting the areas that China would receive. Not surprisingly, Beijing rejected the idea.

The second approach has been presented in several variants by Valencia, Van Dyke, and Ludwig. It has considerable intrinsic appeal, because bargaining would shift from the messy claims of who is entitled to what real estate to the allocation of shares in a development authority. Specifically, to get China to give up some of its claims for a fixed or indefinite period, Beijing might be offered a major say (e.g., a veto) in decisions of the authority.

Although this approach has political advantages, there are two main drawbacks: investors are likely to be leery of a multinational authority;

64 See, for example, M. Valencia, J. Van Dyke, and N. Ludwig, "The South China Sea: Approaches and Interim Solutions," mimeo. (Honolulu: East-West Center, April 26, 1995).
and Beijing may prefer to have a naval presence in Southeast Asia to protect its sovereignty rather than share this control with others. The international-authority concept is certainly worth pursuing, but the political and managerial difficulties of making it work are daunting.

V. Limitations of International Law and the LoS Convention

International Law

Because none of the claimants to the Spratlys has both solid legal justification and continuous occupancy as grounds to assert sovereignty, a court or arbitration panel would have to weigh the relative merits of de jure claims versus de facto possession. In a case as complicated as this, with six direct claimants and several concerned outside parties, there is no apparent way to reach a fair decision. International law does allow judges to use "equity" as a basis for delimiting claims, but this is a highly subjective criterion; its use would certainly be challenged by any party that thinks its interests were not well served.65

A second problem with applying international law is that the International Court of Justice is, by its very nature, composed of jurists with different philosophies. Even experts in dealing with the ICJ often have trouble predicting how it will rule. For example, one of its leading figures, Shigeru Oda, opposes the trend, incorporated in UNCLOS III, of expanding EEZs to favor the rights of littoral states over other maritime

users. These uncertainties in predicting results from ICJ rulings lend credence to charges of arbitrariness, leading many potential litigants to shy away from it as a dispute-resolving mechanism.

The Law of the Sea Convention

UNCLOS III has very elaborate dispute-settlement provisions. Although some issues require "compulsory, binding dispute settlement," maritime boundary disagreements were specifically left to various means of non-binding conciliation. Consequently, various international forums could be convened to work on the Spratlys dispute, but the parties would not be bound to heed their recommendations. Hence, it is not surprising that L. Cordner concludes:

The prospect of the law of the sea providing the key to resolution of the [Spratly] dispute is limited, even though each of the protagonists variously refers to the 1982 United Nations Convention on the Law of the Sea to support its claims.

We concur with this view and suggest that the disputants will, ultimately, need to look elsewhere if there is to be timely resolution of their claims.

VI. Adjusted Winner: Beyond "I Cut, You Choose"

The following procedure by which two people divide a cake, parts of which they value differently, is well-known: one person (A) cuts the cake into two pieces, while the other (B) gets to choose one piece. This pro-

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procedure assures that each person will get at least half the cake if A cuts
the cake 50-50 (as he or she values it), and B chooses his or her preferred
piece.

This approach to fair division goes back to antiquity, receiving mention
in, among other places, the Hebrew Bible, Hesiod's Theogony, and Aesop's
Fables. More relevant for our purposes, cut-and-choose was incorporated
in the 1982 draft of the LoS Convention. That draft specified that
countries having the technology and capital to mine the seabed must share
the desirable locations for extraction, using this procedure.

More specifically, if a country if capable of and wants to mine the
seabed, it must propose a division of the location into two tracts. Then
an international mining company, called Enterprise - representing the
interests of the developing countries through the International Seabed
Authority - gets to choose the tract it prefers. The country proposing the
arrangement receives the remaining tract. In this manner, parts of the
seabed are preserved for commercial development by the developing
countries, which, in the absence of Enterprise, could not otherwise afford
to mine the seabed.

One difficulty of applying cut-and-choose to the Spratlys is that there
are more than two players. This difficulty can be sidestepped if we regard
the conflict as, for the moment, one between China and ASEAN (with ASEAN
being considered as a single player).  

69 For details, see S. Brams and A.P. Taylor, Fair Division: From Cake
Cutting to Dispute Resolution (Cambridge, U.K.: Cambridge University Press,
1996).

70 We use the term ASEAN here, even though Singapore and Thailand are not
claimants and it is uncertain on what terms Indonesia would be involved.
We think this view is realistic as a first step in resolving the overall dispute. China is by far the largest single claimant, against which the ASEAN countries have formed an implicit coalition. Later we shall indicate how the ASEAN countries might, internally, settle their own competing claims.

There are three major problems in applying cut-and-choose to the China-ASEAN dispute over the Spratlys (we henceforth assume the cutter, A, is male and the chooser, B, is female:

1. **Inequitability.** The chooser, B, has an advantage, insofar as she can generally obtain her preferred piece when A is forced to make a 50-50 division in terms of his preferences. By contrast, an *equitable procedure* ensures that each player not only receives at least 50 percent of the goods to be divided but also gets exactly the same amount above 50 percent as the other player.

2. **Inefficiency.** Assume A likes only the vanilla portion of the cake, and B likes only the chocolate portion, but A does not know this. Then A, to ensure himself 50 percent of whichever piece B selects, must divide the cake into two halves. Each of these halves must include one-half the chocolate and one-half the vanilla, making the division exactly 50-50 for both participants. On the other hand, an *efficient procedure* (in the economist’s parlance, "Pareto-optimal") is one which gives an allocation which cannot be improved upon for both players. In this case, the efficient outcome would be to give all the chocolate to A and all the vanilla to B.
3. **Lack of Sharing.** Cut-and-choose does not allow for sharing part of the cake, whereas a *sharing procedure* allows for some level of sharing (not necessarily 50-50). In the case of the Spratlys, this would translate into joint jurisdiction and/or development of some of the islands, especially those in which both sides have a more-or-less equal level of interest and where both can benefit from sharing.

The aforementioned problems with cut-and-choose are solved by a new fair-division procedure called Adjusted Winner (AW). Under AW, each side is given 100 points to allocate among the goods to be divided. In the Spratlys dispute, the "goods" we propose are five groups of islands and adjacent maritime areas in different parts of the South China Sea: North Central, South Central, East, South, and Southwest (see Map 2). This division into zones simplifies the allocation problem to one of more manageable proportions than giving each side, say, 1,000 points to allocate over 230 islands and reefs.

How China and the ASEAN countries would allocate their points depends upon the goals they seek to maximize. We posit three alternative goals for China (C1, C2, and C3), and two for the ASEAN countries (A1 and A2), to illustrate AW.

**Scenarios for China Based on Goals It May Wish to Maximize**

**C1. Political cooperation.** China seeks to establish firmly its sovereignty in the region but minimize antagonisms with the ASEAN countries. In C1, China gives priority to gaining control of the zones closest to China, North Central and South Central — by placing 40 and 30
Map 2. Division of the Spratlys in Five Zones

Map showing the division of the Spratlys in five zones: North Central, South Central, Southwest, Mischief Reef, and East. The map includes labels for various islands and reefs, such as South Reef, Thitu Island, West York Island, and Flat Island. The map also shows the Philippine claim line.

Source: U.S. Department of State Map # B01010, March 1995
points, respectively, on these— and moving less assertively on the East, South, and Southwest zones by bidding only 10 points each for these.

C2. Military prominence. China seeks to secure bases in the North Central, South, and Southwest as a means to project its power throughout the entire region. Accordingly, Beijing places 30, 30, and 40 points, respectively, on these three zones but no points on the South Central and East zones.

C3. Economic gain. China seeks to control the zones with the most promising hydrocarbon deposits (the South and, especially, the Southwest) by placing 30 and 50 points, respectively, on them. It reserves 20 points to try to gain control of the more proximate North Central zone.

Scenarios for ASEAN Based on Goals It May Wish to Maximize

A1. Political cooperation and economic gain. ASEAN avoids intruding on the zones closest to China while making strong bids for the South and Southwest, which have the greatest economic potential, by placing 40 points each on these. A modest bid for the East (20 points)—which China was willing to give up on completely in two of its three scenarios—is also a feature of this scenario.

A2. Concentration of control. ASEAN cedes political control in the North Central and economic control in the Southwest to China. By concentrating its points on the South Central, East, and South—with allocations of 30, 30, and 40 points, respectively—ASEAN tries to force China into noncontiguous zones, thereby impeding China's political-military control over the entire South China Sea.
Table 2. Scenarios for China and the ASEAN Countries

<table>
<thead>
<tr>
<th>Scenario</th>
<th>China</th>
<th></th>
<th></th>
<th>ASEAN</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Political</td>
<td>Military</td>
<td>Economic</td>
<td>Cooperation</td>
<td>Cooperation &amp;</td>
</tr>
<tr>
<td></td>
<td>Cooperation</td>
<td>Prominence</td>
<td>Gain</td>
<td></td>
<td>Economic Gain</td>
</tr>
<tr>
<td>North Central</td>
<td>40</td>
<td>30</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>South Central</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>East</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>South</td>
<td>10</td>
<td>30</td>
<td>30</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Southwest</td>
<td>10</td>
<td>40</td>
<td>50</td>
<td>40</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

These scenarios for China and ASEAN are summarized in Table 2. Pairing off each of China's three scenarios with ASEAN's two scenarios gives six combinations. We have applied AW to each.

To illustrate how AW works, we apply it to (C2, A1). AW begins by awarding each zone to the player that places the most points on it. China wins on North Central (30 to 0); there is a tie on South Central (0 to 0); and ASEAN wins on the East (20 to 0) and the South (40 to 30); and there is a tie on the Southwest (40 to 40). Ignoring the ties for the moment, China wins on one zone, worth 30 points to it, whereas ASEAN wins on two zones, worth 20 + 40 = 60 points to it.

AW awards ties, initially, to the biggest winner, which is ASEAN with 60 points. (If both parties won the same number of points initially, then ties would be broken randomly.) This gives ASEAN 60 + 40 + 0 = 100 points, compared with China's 30 points, which is inequitable.
To ensure equitability, AW has the party that receives the most points initially give back points to the side with the lower total, which is China. The criterion for givebacks is to start with the zone that has the lowest ratio of winner-to-loser points. Observe that the ratio 40/40 = 1 on the Southwest is lower than 40/30 = 1.33 on the South. Nevertheless, if ASEAN were to give back all of the Southwest to China, then China would have 30 + 40 = 70 points and ASEAN only 20 + 40 = 60, so this giveback is too much to create equitability.

It is easy to show that, if ASEAN gave back 7/8 of its 40 points, or a total of 35, and kept the remaining 5, then ASEAN would have 20 + 40 + 5 = 65, and China would have 30 + 35 = 65, making the allocation equitable. We determine the giveback by solving for the fraction $x$ of ASEAN's 40 points that China, which has 30, would have to receive to give it the same number as ASEAN, which has 60 (ASEAN would retain the complementary fraction, 1-x):

\[ 30 + 40x = 60 + 40(1-x), \]
\[ 80x = 70, \]

which yields $x = 7/8$.  

71 The other winner-loser ratio (on the East), 20/0, is infinite, so its ratio is obviously the largest. The ratio for the other tie (South Central) 0/0, is undefined, but it does not matter - as far as points are concerned - because neither side put any points on it. In fact, to avoid dividing by 0, AW specifies that each side must put a minimum of 1 point on each zone. However, we have ignored this requirement here to emphasize the fact that each side might be willing to cede control completely of a zone in order to maximize the number of points it puts on other zones.

72 If the initial allocation of points to the parties is very lopsided, then the winner might have to give back not just a fraction of one zone but an entire zone and then, possibly, some fraction of another zone. Indeed, in combination (C1,A1), the initial point allocation is 70 points to China and 100 points to ASEAN. By giving back the East, which has the lowest winner/loser ratio (20/10 = 2, compared with 40/10 = 4 each for the South and Southwest), China decreases its point total from 100 to 80, whereas ASEAN increases its total from 70 to 80. Hence, only the giveback of all of the East creates equitability in this case. Footnote continues...
Table 3. Winners and Partial Winners for Six China-ASEAN Combinations

<table>
<thead>
<tr>
<th>Region</th>
<th>(C1,A1)</th>
<th>(C1,A2)</th>
<th>(C2,A1)</th>
<th>(C2,A2)</th>
<th>(C3,A1)</th>
<th>(C3,A2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Central</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>South Central</td>
<td>C</td>
<td>5/6C,1/6 A</td>
<td>-</td>
<td>A</td>
<td>-</td>
<td>A</td>
</tr>
<tr>
<td>East</td>
<td>C</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>South</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>3/7C,4/7A</td>
<td>A</td>
<td>3/7C,4/7A</td>
</tr>
<tr>
<td>Southwest</td>
<td>A</td>
<td>C</td>
<td>7/8C,1/8A</td>
<td>C</td>
<td>8/9C,1/9A</td>
<td>C</td>
</tr>
<tr>
<td>Total (for each)</td>
<td>80</td>
<td>75</td>
<td>65</td>
<td>82.9</td>
<td>64.4</td>
<td>82.9</td>
</tr>
</tbody>
</table>

The AW allocations for the six combinations are given in Table 3. In all except (C1,A1), there is an equitability adjustment, whereby one side receives a certain fraction, and the other the complementary fraction, of one zone. This fractionalization of zones ensures not only that the allocation is equitable but also that it is efficient. In fact, AW produces a unique allocation that is equitable, efficient, and envy-free, which means that neither side would prefer the other side's allocation to its own and so would not envy the other side.

Because the equitability adjustment always occurs on the one zone that the two sides value most equally, it has the strongest claim for being the zone over which the two sides share control. In our first example, (continued)

Also notice in this case that what the initial winner, China, loses (20 points) is not what the initial loser, ASEAN, gains (10 points) in the giveback. There will be equality in the giveback only if there is a tie in the points that the two sides allocate to the zone, as was true in our earlier example, (C2,A1).
(C2,A1), this zone was the Southwest, to which both sides allocated 40
points. The fact that China ends up with 7/8, or 87.5 percent, of it is
because China was the initial loser overall and needs this percent of the
Southwest to catch up with ASEAN.

Practically speaking, what might such sharing mean? One answer is that
the islands in the Southwest could be divided in the ratio of 7:1, but then
there is the question of who is entitled to which islands. This question
would be especially difficult to answer if there were hydrocarbon deposits
near some but not others. Alternatively, the two sides could negotiate a
production and revenue-sharing agreement, based on this ratio.73

Except for the zone on which there is an equitability adjustment, each
side would gain complete sovereignty over all islands in the zone it wins.
This is not to say that joint development agreements would be ruled out,
and might even be attractive, if a promising field overlapped two zones.

The winners and partial winners in Table 3 show that each side benefits
substantially under AW. Depending upon the combination of bids, both China
and ASEAN realize between 65 and 83 percent of their objectives. Even in
the worst case, (C1,A2), each side gets almost 2/3 of the zones as it
values them. Moreover, because AW is efficient, there is no other

73 To facilitate such negotiation, a neutral party administering AW might
tell the two sides that there was a relative winner, getting 7/8, and a
relative loser, getting 1/8, but not which side was the winner. Then both
sides would be asked to formulate an agreement specifying what the 7/8-
winner and 1/8-loser each would receive. Only after the agreement was
reached would the parties be told which side was the winner and which the
loser.
allocation of the (C1, A2) combination—or any other combination—that would give both sides more points than shown in Table 3.74

For all the parties to have confidence in the procedure, its skillful administration by an unimpeachable neutral party would be essential. We shall not discuss administrative issues here, but they should be possible to resolve.

Although we have concentrated on the China-ASEAN AW results, the same procedures could be used among the four ASEAN claimants. There are clear natural divisions within ASEAN: the East for the Philippines, the South for Malaysia and Brunei, and the Southwest for Vietnam. Of course, these allocations would depend upon the outcome of the China-ASEAN division, on which each of the ASEAN claimants would have input.

One final question remains, which is how to deal with the three other major issues involved in the dispute: freedom of passage, economic

74 To be sure, AW, like any allocation mechanism, is potentially manipulable if one side knows the other side's point allocation. However, as Brams and Taylor, 1996, show in chapter 4, there are safeguards one can build in against manipulation. For example, a less manipulable procedure, called Proportional Allocation (PA), is one which either side could invoke if it believed the other side had received advance information about its bid and wished to protect itself.

While strategically more robust than AW, PA is not efficient. In the case of (C2, A1), for example, each side would obtain 62.9 points under PA rather than the 65.0 it receives under AW. Moreover, under PA, every zone would have to be shared, making the sovereignty problem less tractable.

In practice, AW would be extremely difficult to manipulate to one's advantage. Indeed, if one side tried to do so, but its guesses about the other side's allocations were only slightly off, it could end up hurting itself badly. Consequently, we think each side would have a strong incentive to make sincere allocations, keyed to its own goals.
think AW could be used to determine who "wins," relatively speaking, on what issues, but these could also be settled in other ways.75

Freedom of passage is probably best dealt with through a multilateral treaty. As long as sovereignty is satisfactorily resolved, the economic development issues are attenuated except for the zones that must be shared. In that case, AW can aid in determining production and revenue-sharing arrangements.

Establishing a security agreement for the region involves many uncertainties, including the following: Which nations will be involved? What is to be guaranteed? What enforcement and dispute-resolution methods are most appropriate? What administrative structures need to be established? AW could certainly help in setting priorities for regional security arrangements, which would be facilitated if there was confidence in the solution AW produced on the sovereignty issue. If amity is not created, then no formal allocation mechanism can be the glue for a regional security pact.76

75 So far AW has been applied only retrospectively to international disputes. These include the 1978 Panama Canal Treaty between the United States and Panama, analyzed by Brams and Taylor, 1996 (in chapter 5) and by Howard Raiffa, The Art and Science of Negotiation (Cambridge, Ma.: Harvard University Press, 1982) (in chapter 12); and the 1979 peace treaty between Egypt and Israel, as it was negotiated at Camp David in 1978, analyzed by Steven J. Brams and Jeffrey M. Togman, "Camp David: Was It Fair?" preprint, Department of Politics, New York University, 1996. We believe that AW can be applied prospectively, as well, to a broad range of current disputes.

76 It is worth noting that, if the current approaches to the Spratlys dispute continue in stalemate, the tension between China and the ASEAN countries may reappear, leading to a desire to exclude China from Southeast Asian security planning.
VII. Conclusions

The argument of this article can be summarized by the following seven propositions:

1. None of the legal or other claims to the Spratlys is decisive. While there is some merit to the claims of all six parties to the dispute, all claims can be challenged.

2. The workshops sponsored by Indonesia have been useful, but they were designed mainly to deal with technical questions and also to create a climate such that cooperation between China and the ASEAN countries would be encouraged. They are not an adequate forum for resolving sovereignty issues.

3. The LoS Convention may be helpful in determining certain legal questions, but its rules were not established to settle sovereignty disputes. LoS suggests two principal routes for resolving sovereignty disputes: (i) conciliation or arbitration, which seem to have limited promise, and (ii) hearings before the International Court of Justice, which the PRC has said it will not accept.

4. The most promising areas for oil and natural gas deposits are in the southern and southwestern parts of the South China Sea. Because these areas have deep waters and are a long distance from major markets, it is highly unlikely that these deposits will be developed until sovereignty questions are resolved.
5. To avoid continued tension on this issue and to provide an adequate basis for development of the hydrocarbon resources, it is in the interest of both China and the ASEAN countries to resolve the sovereignty dispute.

6. All parties to the Spratlys dispute can benefit from a fair settlement. The dispute has remained intractable because there is no clear notion of what is "fair," especially in the light of different legal and extra-legal claims, including forced occupation of some of the islands.

7. Adjusted Winner (AW) provides a promising way to reach closure on a settlement.

Our AW scenarios for China and ASEAN are meant to be illustrative, because we do not know exactly what priority each side would attach to different goals. We think the goals we postulated are plausible, but it is likely, especially for ASEAN, that the actual bidding strategies might reflect a blend of the goals we identified.

This blending, of course, would produce different allocations. However, our main purpose is not to say what the "true" valuations of China and ASEAN are, but, rather, to suggest a methodology for reaching a fair settlement.
Thus, our analysis does not stand or fall on substantive disagreements about point allocations or the goals that underlie them. In our opinion, this methodology, in producing equitable, efficient, and envy-free agreements, is a very substantial improvement over cut-and-choose.

We do not argue that AW is the only satisfactory way to resolve the Spratlys dispute. We do think, however, that the various approaches currently being tried could greatly delay a settlement, exacerbating the conflict. Perhaps more important, AW and its extensions encourage the parties to see the process as a bargaining and sharing one, rather than one whose solution is dictated by a court or imposed by an outside power.